Amit Tomar

At the cusp of Arts and Computer Science..

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https://amit-tomar.github.io/resume

Keywords : 3D Computer Graphics, Data Visualization, UI/UX, Product Usability, Middleware, RESTful APIs.

💼 Work Experience

Dec 2015 to Currently — **Group Development Manager**, Avataar.Me.
Managed design and development of 3D graphical assets generation pipeline for virtual garments and Avataars.
- Implemented several 3D graphics related tools for seamless 3D content generation and consumption.
- Automated several pipeline tasks using Blender Python scripting.
- Implemented RESTful APIs over AWS for providing various Avataar operations in the form of PaaS.
- Implemented ThreeJS based web-renderer for user Avataar and apparels.

July 2015 to Nov-2015 — **Technology Lead**, Avataar.Me.
- Designed and developed a graphical tool suite for apparel designing professionals to virtually create apparels.
- Worked on performance analysis and enhancement of internal cloth simulation engine.

Dec-2010 to July-2013 — **Systems Engineer**, **Embedded Innovation Lab**, Tata Consultancy Services.
Was part of design and development teams for HMI and middleware frameworks for In-Vehicle Infotainment Systems.

- Next generation IVI systems for year 2020 : HONDA MOTORS R&D LAB:
  - Involved in design & implementation of IPC mechanism agnostic **IPC Framework** based on message queues.
  - Developed **UI and controllers** for several applications including Audio/Video Player, Web Browser etc.
  - Developed **System Components Manager** for synchronization among several system components.
  - Involved in design & implementation of HMI tool agnostic **HMI framework**.
  - Worked with the team in attaining **GENIVI** compliance 1.0 for TCS X-86 platform.

</> Technical skills

Expertise — Rapid product protoyping.
Intermediate — C, C++11, Qt-5.0, QML, Python 2.7, Flask, OpenGL 3.3, ThreeJS, Amazon Web Services, RESTful APIs.
Introduction — Blender scripting, HTML, JavaScript, D3.js, Bootstrap, Redis, MySQL, SpringBoot, Version control, Linux.

℘ Opensource Project Contributions

Jan-2014 to March-2014 — **GCompris (A GNU package)** .
GCompris is a high quality, educational, software suite comprising of numerous activities for children aged 2 to 10.
Implemented the Qt Quick version of game 'Missing Letter' and 'Tower of Hanoi', contributing around **1000 LOC**.

https://github.com/bdoin/GCompris-qt/graphs/contributors

📖 Publications & Patents

Nov-2016 — **NodeTrix-Multiplex: Visual Analytics of Multiplex Small World Networks**.
Agarwal S., Tomar A., Sreevalsan-Nair J: In Complex Networks & Their Applications , Springer, Cham.

Dec-2018 — **Virtual Representation creation of user for fit and style of apparel and accessories (US Provisional)**.

🏛 Education

2013–2015 — **M.Tech. in IT**, *International Institute of Information Technology*, Bangalore, **CGPA : 3.22/4**.
Thesis: Augmenting NodeTrix for effective Small World Network Visualization

2006–2010 — **B.Tech (Honors) in CSE**, *Meerut Institute of Engineering and Technology*, **75.5**%.
Dissertation : Traffic analysis based automatic traffic light controller

2004 — **Class 12th**, *CBSE, Army Public School*, Meerut Cantt., **78.6** %.

👥 Academic Projects

July-2018 to Dec-2018 — **Ray casting based direct volume rendering for medical data analysis | Three.JS**.
Implemented ray casting based direct volume renderer to visualize 3D volume data. Scalar field values were mapped to color and opacity using interactive transfer functions. Main application area of volume rendering is medical imaging where volume data is obtained from X-ray, CT scans, PET scans etc.

Jan-2014 to Dec-2014 — **Visualization for Security Analytics | Research collaboration IIITB & EMC^2 | D3.js**.
Investigated, identified and implemented effective and intuitive visualizations of security analytics, ensuring that the enterprise security incident response teams can not only consume the security analytics results, but also make better informed decisions with regard to its correctness and criticality.

https://github.com/Amit-Tomar/MinimalisticKernelDevelopment

Feb-2014 to July-2014 — **Copy-Dog : Augmented Suffix Tree Implementation for Software Plagiarism Checking | C++** .
Implemented augmented Suffix Tree data structure for checking the plagiarsim in the codes submitted to various professors at IIITB. Given a set of programming assignments, this implementation checks for the plagiarism among all the files and generates a detailed report of the copied code along with the file names.

https://github.com/Amit-Tomar/Parametrized-String-Matching-Implementation-for-Software-Plagiarism-Check

Feb-2014 to March-2014 — **Implementation of Loop Subdivision algorithm for Interactive Surface Modeling | C++ OpenGL** .
Implemented an interactive program that allows the editing and rendering of a mesh surface. The surface is refined through successive subdivision using a standard subdivision scheme. User will be able to edit the shape of the surface by dragging "control points" of the surface.

https://github.com/Amit-Tomar/Loop-Subdivision-For-Interactive-Surface-Modelling

April-2014 to May-2014 — **Animating Hierarchical Object Models using Custom Scenegraph | C++ OpenGL**.
Implemented a program to simulate the motion of an articulated robot that moves blocks from one conveyor belt to another. Objects were modelled as logical hierarchical structures and a custom scenegraph was implemented in the process. Simple forward kinematics was used to animate the robot.

https://github.com/Amit-Tomar/Animating-Hierarchical-Object-Models-Using-Custom-Scenegraph

Dec-2009 to May-2010 — **Traffic Analysis Based Automatic Traffic Light Controller | Embedded C** .
Implemented an automated traffic signal, which controlled the lights on the basis of traffic analysis, automatically. This system takes into consideration the amount of traffic on each side at a particular instant, unlike the existing system which has a fixed amount of time allocated for a side, based on one time initial calculations.

https://sites.google.com/site/tabatlcs/

🏆 Honors & Awards

July-2013 — **99.08 %ile** in **GATE 2013**

June-2013 — **Technical Excellence Award**, Tata Consultancy Services

2012 — **Employee of the month (Twice)**, Feb-2012 & Nov-2012, Embedded Innovation Lab, TCS

2017-18 — **Most Valuable Performer of Quarter (Twice)**, Sep-2017 & Dec-2018, Avataar.Me

🔗 Others

StackOverflow — http://www.stackoverflow.com/users/1093223/amit-tomar

GVC Lab — http://www.iiitb.ac.in/GVCL/people.html

Behance — http://www.behance.net/amitTomar

GitHub — http://www.github.com/Amit-Tomar